

April 9, 2003

MAINE PUBLIC UTILITIES COMMISSION  
Inquiry Into Alternatives for Ensuring  
Completed 911 Calls

NOTICE OF INQUIRY

WELCH, Chairman; NUGENT and DIAMOND, Commissioners

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## I. INTRODUCTION

In this Notice we open an inquiry to study options for Maine's local exchange companies (LECs) to improve the reliability of the Enhanced 911 network. Specifically, we are concerned because (1) when communications are disrupted between local exchange carriers' small "remote" switching machines and their large "host" switching machines, Enhanced 911 calls made by customers served by remote switches will not go through; and (2) remote switches serve more than half of Maine's telephone customers. While we realize the isolation of a remote switch from its host switch is not a frequent event, from outage reports filed by LECs we are keenly aware that it can and does occur. When it does occur, the safety of all customers served by the remote switch can be put at risk. The goal of this inquiry, therefore, is to determine if there are economically feasible ways to ensure that all Enhanced 911 calls in Maine reach Public Safety Answering Points, or, at a minimum, that no 911 call goes answered.

## II. BACKGROUND

All calls, including 911 calls, are processed and routed by local telephone companies' switching machines. In larger communities, the switching machine is called a "host switch;" in the surrounding smaller communities the switching machines are called "remote switches." Remote switches rely on their host switch for most of their intelligence and advanced services, including enhanced 911 information. When a remote switch is isolated from its host switch, the remote switch generally can still complete calls between customers that it serves, but it cannot process other Basic Service Calling Area (BSCA) or long distance calls and, most importantly, not 911 calls.

In Maine's E-911 network, all local exchange company *host* switches are directly connected to two 911 "tandem" switches, one in Portland, the other in Lewiston. Those tandem switches are each connected to Maine's 49 Public Safety Answering Points (PSAP) and route each 911 call to the particular PSAP that serves the part of Maine from which the call was made. *Remote* switches, however, are *not* directly connected to the E-911 tandem switches; therefore, any 911 call made by a caller served by a remote switch must first reach the remote switch's host switch to get to the caller's PSAP.

### **III. DISCUSSION**

Because the E-911 system was developed and implemented on a town-by-town or county-by-county basis, it is likely that many Maine telephone customers understand its special features and advantages, namely, that when a subscriber dials 911, the call automatically transmits the subscriber's name, address, and phone number to a PSAP operator's video screen – whether or not the caller is able to speak or remain on the line. This information enables the PSAP operator to dispatch the appropriate emergency service responder to the caller's location. Maine's local exchange telephone customers have financed the development of the State's Enhanced 911 system and its operational and maintenance costs through surcharges on their phone bills. It is reasonable for these customers to expect that their 911 calls will go through and that the Enhanced 911 system will deliver caller ID and location information to PSAPs reliably.

To date, Verizon has configured over 95% of its remote switches to route 911 calls to a local "24/7" emergency number when the remotes are isolated from their hosts. In that way, 911 calls are answered and can be dealt with, even though subscriber ID and location data are not transmitted with the calls (as it is with E-911 calls). The State's Emergency Services Communications Bureau (ESCB), which manages the E-911 system, has arranged for the emergency numbers (called "emergency stand-alone" (ESA) numbers) and provided them to Verizon. ESCB is continuing this process with the goal of implementing ESA numbers for all Verizon's 126 remote switches. Indeed, the ESCB estimates 99% of Verizon's remote switches will be able to re-route 911 calls to a local ESA number within the next three months. The ESCB has discussed this approach with several independent telephone companies, but it is not aware of any company that has implemented ESA numbers, as Verizon has done, or taken other steps to deal with 911 calls being blocked when remote switches are isolated.

The approach Verizon has taken is far from ideal, however, because the special safety benefits of Enhanced 911 are lost. It would be preferable to have multiple geographically diverse cable routes between each remote switch and its host switch. In that way, if the primary remote-to-host link became blocked (or was inoperable for any reason), 911 calls by customers served by the remote switch would still be routed to the host switch over a geographically alternate link (and then onto the E-911 network), thus preserving Enhanced 911's safety features and protections for 911 callers. Another possibility would connect the remote switches in a survivable ring that includes their host switch, such as a SONET ring. With the help and expertise of Maine's local exchange companies and the ESCB, our inquiry will examine these and other options for ensuring that all 911 calls reach PSAPs or, as a minimum, that no 911 call in Maine goes unanswered. We will also explore the cost of each alternative.

COMMISSIONERS VOTING FOR: Welch  
Nugent  
Diamond